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R E M A R K S

This paper is in response to the Final Office Action mailed on August 21, 2006 wherein Claims 1-7 and 9-17 were rejected. Claims 1-7 and 9-17 remain pending.

Claim Rejections Under 35 USC § 103

On page 2 of the Office Action, the Examiner rejected Claims 12-16 under 35 USC §103 as being unpatentable over Ito et al in view of Wachi et al. On page 5 of the Final Office Action Claim 17 was rejected under 35 USC §103 as being unpatentable over Ito et al in view of Wachi et al. and Anderson et al. On page 6 of the Final Office Action Claims 1-7 and 9-11 were rejected under 5 USC §103 as being unpatentable over Ito et al. in view of Andersen et al. and Wachi et al.

Independent Claims 1, 7, and 12 include claim elements directed to an oxygen sensor having a discrete on and off output. Ito et al., Wachi et al., and Andersen et al. are silent with respect to a discrete switching oxygen sensor. The Examiner has cited element 15 of Ito et al. as a discrete oxygen sensor. Applicants object to this characterization, as element 15 is not described as a switching oxygen sensor. In column 3, line 64 through column 4, line 8 the oxygen concentration sensors 15 and 16 are described as "detecting the concentration of oxygen present in the exhaust gases". There is no explanation of how the oxygen sensors 15 and 16 detect oxygen or the type of signal that they generate. Applicants will not postulate as to how the oxygen sensors 15 and 16 operate but assert that Ito et al. is clearly silent with respect to a switching oxygen sensor. Switching oxygen sensors (oxygen sensors having an on and off - 1 and 0 output), as claimed in the present invention, provide significant cost benefit as complex electronic analog to digital circuitry is not required to interpret the oxygen sensor output.

The Examiner theorizes that Figure 9 of Ito et al. indicates that the oxygen sensors 15 and 16 have discrete outputs and states that "The increase has a very large slop such that the signal is almost discontinuous with respect to elapsed time. Without speculation, one with ordinary skill in the art immediately recognizes that this type of display is shown by a typical discrete switching oxygen sensor." No greater words of speculation could have been written. As stated

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previously, there is no explanation of how the oxygen sensor 15 operates. The Examiner is practicing improper hindsight reconstruction, as there is no teaching or motivation to suggest the claims of the present invention. Applicants object to any notion that Ito et al. discloses switching oxygen sensors and assert that the Examiner's statement is highly speculative and is not supported by prior art. The Examiner has failed to explain where each of the specific limitations recited in the rejected claims is found in the prior art relied on.

If the Examiner relies on personal knowledge that the operation of the apparatus of the present invention is obvious in light of the cited art, specifically the operation of the oxygen sensor 15, Applicants respectfully request support for this assertion in the form of an affidavit that shall be subject to contradiction or explanation by the affidavits of the Applicant and other persons under 37 C.F.R. 1.104 (d)(2).

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Conclusion

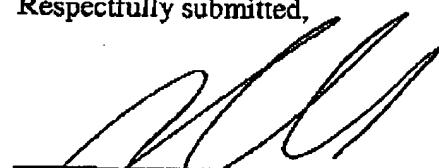
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The entire Final Office Action dated August 21, 2006 has been carefully reviewed, and this response is submitted as being fully responsive thereto. In view of the preceding remarks, Applicants respectfully submit that Claims 1-7 and 9-17 are in condition for allowance and respectfully request such action at the Examiner's earliest convenience. If the Examiner believes that personal contact would be advantageous to the disposition of this case, he is requested to call the undersigned at his earliest convenience.

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If for some reason a fee needs to be paid, as well as one-month extension fee please charge
Deposit Account No. 07-0960 for the fees, which may be due.

Respectfully submitted,



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